I claim:

1. A reception method for detecting at least one information signal modulated on at least one repetitive waveform, the method comprising:
   - coupling the repetitive waveform out of a communication channel, the repetitive waveform having at least one predetermined period, and
   - combining at least a first time-domain sample of at least one of the repetitive waveforms with at least a second time-domain sample of at least one of the repetitive waveforms to generate at least one coherence signal indicative of the at least one information signal.

2. The reception method of claim 1 wherein the communication channel is at least one of a waveguide and a free-space propagation medium.

3. The reception method of claim 1 wherein the at least one repetitive waveform includes a plurality of repetitive waveforms, each of the plurality of repetitive waveforms having similar values of center frequency and bandwidth.

4. The reception method of claim 1 wherein each of a plurality of the repetitive waveforms has a different period.

5. The reception method of claim 1 wherein the repetitive waveforms have a bandwidth comprised of at least one of a set comprising a continuous spectrum, a comb of spectral lines, a single spectral line that is randomly modulated, and a single spectral line that is pseudo-randomly modulated.

6. The reception method of claim 1 wherein the repetitive waveforms are noise waveforms.

7. The reception method of claim 1 wherein each repetitive waveform is modulated by a plurality of information signals.

8. The reception method of claim 1 wherein the at least one repetitive waveform is phase modulated by the at least one information signal.

9. The reception method of claim 1 wherein the combining step includes at least one interferometry step wherein at least one of the time domain samples is delayed and combined with at least one other time-domain sample.

10. The reception method of claim 9 wherein the delay corresponds to the waveform period.

11. The reception method of claim 9 wherein the time-domain samples that are combined are consecutive samples of the repetitive waveform.

12. The reception method of claim 9 wherein the time-domain samples that are combined are non-consecutive samples of the repetitive waveform.

13. The reception method of claim 9 wherein the at least one interferometry step is performed by at least one of a Michelson interferometer and a Mach-Zender interferometer.

14. The reception method of claim 1 wherein the combining step includes frequency shifting at least one of the time-domain samples.

15. A reception method for separating information signals modulated onto a plurality of repetitive waveforms having different periods, the method comprising:

- coupling the waveforms out of a communication channel,
- generating a plurality of time-domain samples of the received waveforms having at least one time offset relative to at least one of the signal periods, and
- correlating the plurality of time-domain samples.

16. The reception method of claim 15 wherein the steps of generating a plurality of time-domain samples and correlation of the samples is performed by an interferometer.

17. The reception method of claim 15 wherein the step of coupling the waveforms out of a communication channel is performed by an array of receiving elements.

18. The reception method of claim 15 further comprising a step of frequency shifting at least one of the time-domain samples prior to combining the samples.

19. The reception method of claim 15 wherein the time-domain samples that are combined are consecutive samples of the repetitive waveform.

20. The reception method of claim 15 wherein the time-domain samples that are combined are non-consecutive samples of the repetitive waveform.

21. In an electromagnetic-wave communication system, a transmission method for transmitting at least one information signal modulated on at least one repetitive waveform, the method comprising:
    - generating at least one repetitive waveform having at least one predetermined period,
    - modulating at least one information signal onto at least one of the waveforms, and
    - coupling the waveforms into a communication channel.

22. The transmission method of claim 21 wherein the modulating step includes one or more of a set comprising phase modulation and frequency modulation.

23. The transmission method of claim 21 wherein the generating step is characterized by generating a repetitive noise waveform.

24. The transmission method of claim 21 wherein the generating step is characterized by generating a repetitive noise waveform having at least one component being frequency-offset from at least one other component.

25. The transmission method of claim 21 wherein the generating step includes generating a plurality of repetitive waveforms having similar values of center frequency and bandwidth.

26. The transmission method of claim 21 wherein each of a plurality of the repetitive waveforms has a different period.

27. The transmission method of claim 21 wherein the generating step includes generating repetitive waveforms that have a bandwidth comprised of at least one of a set comprising a continuous spectrum, a comb of spectral lines, a single spectral line that is randomly modulated, and a single spectral line that is pseudo-randomly modulated.

28. A transmitter for transmitting at least one code-length division multiple access signal, the transmitter comprising:
    - a waveform generator capable of generating a repetitive waveform having at least one predetermined period,
    - a modulator capable of modulating at least one information signal onto at least one portion of at least one period of the repetitive waveform, and
    - a coupler capable of coupling the modulated information signal into a communication channel.

29. The transmitter of claim 28 wherein the modulator phase modulates the information signal onto at least one portion of at least one period of the repetitive waveform.

30. The transmitter of claim 28 wherein the waveform generator generates a repetitive noise waveform.

31. The transmitter of claim 28 wherein the waveform generator generates a plurality of repetitive waveforms having similar values of center frequency and bandwidth.

32. The transmitter of claim 28 wherein the waveform generator generates a plurality of repetitive waveforms having different periods.

33. The transmitter of claim 28 wherein the waveform generator generates a plurality of repetitive waveforms having at least one frequency offset.

34. The transmitter of claim 28 wherein the waveform generator generates repetitive waveforms that have a bandwidth comprised of at least one of a set comprising a continuous spectrum, a comb of spectral lines, a single spectral line that is randomly modulated, and a single spectral line that is pseudo-randomly modulated.

35. A receiver for receiving at least one code-length division multiple access signal, the receiver comprising:
    - an input coupler coupled to a communication channel capable of receiving a plurality of repetitive waveforms having at least one predetermined period, and
    - a combiner coupled to the input coupler, the combiner capable of providing a plurality of time-domain samples of the received waveforms, at least one of the samples being time offset relative to the at least one predetermined period, the combiner capable of combining the time-domain samples for generating a coherence signal indicative of at least one information signal modulated onto at least one of the noise signals.

36. The receiver recited in claim 35 wherein the input coupler includes an array of receiving elements.

37. The receiver of claim 35 wherein the combiner combines consecutive time-domain samples of the repetitive waveform.

38. The receiver of claim 35 wherein the combiner combines non-consecutive time-domain samples of the repetitive waveform.

39. The receiver recited in claim 35 wherein the combiner includes an interferometer.

40. The receiver of claim 39 wherein the interferometer is at least one of a set comprising a Michelson interferometer and a Mach-Zender interferometer.

41. The receiver of claim 35 further comprising a frequency shifter for frequency shifting at least one of the time-domain samples.